UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,084	10/26/2006	Joseph G. Seebauer	3281B-01	9915

26645 7590 11/12/2008

THE LUBRIZOL CORPORATION
ATTN: DOCKET CLERK, PATENT DEPT.
29400 LAKELAND BLVD.
WICKLIFFE, OH 44092

EXAMINER	
SALVITTI, MICHAEL A	
ART UNIT	PAPER NUMBER
4131	

MAIL DATE	DELIVERY MODE
11/12/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/598,084	SEEBAUER ET AL.	
	Examiner	Art Unit	
	MICHAEL SALVITTI	4131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/17/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because the article/noun agreement is incorrect in the first sentence; "an" should be removed, or "acids" should be made singular to comply with proper English grammar. Correction is required. See MPEP § 608.01(b).

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Increasing the Hydrophobicity of Unsaturated Water-Soluble Polymerizable Sulfonic Acid Emulsions with Lipophilic Amines.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-10, 13-16 and 19-25 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,552,939 to *Thaler et al*.

As to claim 1, '939 discloses a process for incorporating an ethylenically unsaturated water-soluble polymerizable sulfonic acid (acrylamidomethylpropane sulfonic acid, AMPS) into a polymer emulsion (column 4, lines 34-37). This process,

demonstrated by Example IV (column 4, lines 38-44), uses 13.7% of the lipophilic amine (calculated by the examiner, i.e. [20.0 grams amine]/[146.0 grams total monomer]). Styrene is essentially insoluble in water, and is a co-monomer in this polymerization. Water is the solvent (column 4, line 23), and azobisisobutylronitrile (AIBN, column 4, line 22) acts as the radical initiator.

Claims 2-4 have been anticipated by the use of AMPS in Example 4 of '939, as discussed above. AMPS fits the description of the requisite monomers described in the instant claims; it is an unsaturated hydrocarbylamidalkanesulfonic acid, a requisite feature of claim 2; it has the structure given in Figure A(I) of claim 3; and it is listed as a preferred monomer in claim 4.

Claim 5 cites styrene sulfonic acid as a monomer; *Thaler* discloses styrene sulfonic acid as a suitable monomer (see column 3, lines 14-19).

Claims 6 and 7 disclose a lipophilic ammonium containing about 6 to 36 carbons. '939 discloses use of trioctylammonium salts (column 3, lines 9-18). The preferred embodiment discloses 16-24 carbons (column 2, lines 33-38) attached to the hydrophobic amine, which is contained within the instant claimed range of 6-36 carbons.

Claim 8 discloses the use N,N-dimethyl-n-dodecyl amine as the lipophilic amine, and claim 9 discloses use of the aforementioned amine with AMP as a water-soluble monomer. Example VII of '939 (column 5, lines 24-38, and Table I) discloses a reaction containing N,N-dimethyl-dodecyl amine and AMPS. This amine gives "…dramatically better incorporation of AMPS into the polymer…" (column 5, lines 29-30). Claim 10 is anticipated by the addition of PG220M surfactant (column 4, line 21) to Example III.

As to claims 13-14, Example IV states that the lipophilic amine salt was added (13.7% by weight, column 4, lines 39-44), and the reaction occurs at 80°C (column 4, line 27). These values have sufficient specificity to anticipate the claimed ranges.

As to claims 15, 16 and 19, the products of '939 fit the broadest reasonable interpretation of fillers, whereby the products can be "used in various applications such as in foams, as a gelling agent for a solution or as a drilling mud additive" (column 2, lines 3-7). Example VI (column 4, lines 61-68) shows treatment of the emulsion with toluene and methanol to control the viscosity.

Claims 20-25 have been anticipated by Example VII in '939 (column 5, lines 3-65). N,N-dimethyldodecylamine (4% by weight) was polymerized with AMPS in an aqueous medium. AIBN initiates the reaction. Toluene is present as an organic solvent. The monomer units present in the polymerization are inherently chain transfer agents. The product is claimed to be a filler material (column 2, lines 3-7).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 11-12 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,552,939 to *Thaler et al.* as applied to claim 1 above, and further in view of US 2004/0259739 to *Monfreux-Gaillard et al*. and U.S. Patent 3,539,484 to *Bowman et al.*

As stated above, *Thaler* discloses a method of making an emulsion of sulfonated copolymers by means of emulsion polymerization. These emulsions contain lipophilic amines and find use in filler applications. A key claimed feature is their hydrophobicity; this is unique amongst sulfonated polymers, which are normally water-soluble (column 1, lines 55-68). *Thaler* does not anticipate the polymerization of non-ionic water soluble monomers in '939. Co-polymerization of water-insoluble (e.g. styrene, column 4, lines 15-32) and ionic water-soluble (e.g. vinyl sulfonate, column 3, lines 54-68) monomers is disclosed.

As to claims 11 and 12 *Monfreux-Gaillard* discloses a copolymerization of acrylamide and AMPS (see paragraph [0018] and claim 2 of '739) in a method similar to the instant application, using di-n-alkylamines (paragraph [0015], line 4). Acrylamide is a non-ionic and water-soluble monomer, and the use of an acrylamide leads to enhanced stabilization of emulsions (paragraph [0014], lines 1-2).

At the time of invention, it would have been obvious to one of ordinary skill in the art to substitute acrylamide as disclosed by *Monfreux-Gaillard* for the vinyl sulfonate or

styrene disclosed by *Thaler*, with the motivation of creating a polymer capable of enhanced emulsive stability.

As to claims 16-18, *Thaler* does not anticipate the use of the emulsion as an adhesive, per se, nor is the addition of formaldehyde-type resins to the composition considered.

Bowman teaches the preparation of resin binders which use phenol-formaldehyde and urea-formaldehyde, exhibit a fast curing time (column 1, lines 44-55) and show better resistance to wetting, among other improved properties (column 1, lines 56-71).

Thus, at the time of invention it would have been obvious to one of ordinary skill in the art to combine the sulfonated hydrophobic polymerization products taught by *Thaler*, with the addition of a resin binder, as taught by *Bowman*. The motivation behind this combination would be impartation of adhesive qualities to a hydrophobic emulsion, with the expectation of creating an adhesive showing greater water-resistantance.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL SALVITTI whose telephone number is (571)270-7341. The examiner can normally be reached on Monday to Friday 8AM to 5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571)272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner
Art Unit 4131

M.S.